

# Daily GLOWBUGS

## Digest: V1 #75

via AB4EL Web Digests @ SunSITE

Purpose: building and operating vacuum tube-based QRP rigs

[AB4EL Ham Radio Homepage @ SunSITE](#)

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%%%% GlowBugs %%%%% GlowBugs %%%%% GlowBugs %%%%% GlowBugs %%%%%

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**Subject: glowbugs V1 #75**

**glowbugs**

**Monday, July 14 1997**

**Volume 01 : Number 075**

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Date: Sun, 13 Jul 1997 13:05:02 -0500 (EST)

From: "Roberta J. Barmore" <rbarmore@indy.net>

Subject: [none]

Hi!

Well, I went to the Indy Hamfest yesterday; didn't meet any list members as far as I recall, but I did pick up a nice sunburn and still coping with a \*massive\* headache from too long in the bright sun. :)

Ahh, but worth it! One regret, I looked at a couple of nice Globe Scouts (\$25 @) and intended to buy one...then got distracted and didn't get back to 'em in time: seller had packed up and left!

What did I buy? Welllll...a Shure 3-A carbon mic and stand, \$70; this is a spring-suspended job. The cast-metal stand has been broken and superglued (arrgh) but will get epoxy unless someone here can tell me how to braze such material. It is reputed to be in working shape!

A Les Logan Speed-X bug with an unusual yoke--it's got a nice big T-bar, and a round hole through which the arm passes, as if Les had been getting telepathic influence from Mac & T.A. Co. Plating on the yoke is flaking \*badly\* and there are a few cracks in it at the far ends of the T-bar. (Attn serious key collectors: is it kosher to have this replated? Is it \*safe\* to do so with the observed cracks?). Gave \$75, which seemed about right.

Same fellow who had the Logan had a lot of nice Vibroplexes, including a japanned-base with most of the pinstriping intact for \$225 (I passed); also some nice Signal and Mac & T.A. Co. streamkeys not too horribly overpriced. Elsewhere, I saw another japanned-base Vibro, with landline points and \*most\* of the pinstriping in FB shape; but the nitwit had slapped a huge hunk of tape over one corner and wanted \$325 firm! Mentioned to him that damage to the striping was likely and would reduce the value, and was told, "I don't care, I just sell 'em." Idiot!

Picked up a '40 ARRL HB, "Radio" mags from April & Aug '34 (very nice)

and June '43--by that date, the entire West Coast gang was g-o-n-e and it was, well, not really too much of a magazine, alas. The Bernie Ontiveros draftmanship is conspicuously absent. Also got an undated Stancor "Amateur Transmitter Circuits, which I'd guess to about '35--newest tubes shown are 2A5 and 6C6. Picked up the booklet for the Collins 516F-2 power supply which I think is what came with my KWM-2. And new RSGB and ARRL HBs, just to stay sort of current. There is now and actual regen receiver, with a type N vernier no less, in the the ARRL HB--though it uses those funny looking tubes with no heaters and only three leads.

Other than that, I bought a few "doorknob" xtals, a BC-610 rock for 3.58 mc (!), a small slab of Bakelita few old-fashioned knobs and three meters. Nothing much very big.

Still sorry I missed the Globe Scout, and a fair-looking HQ-129X; but they'd've about had to be hung from the ceiling to fit 'em in the hamshack, and the OM would have probably tried to string me up next to 'em, so it's all for the best.

73,  
--Bobbi

Ummm, the cat sent this for me about halfway through, my fault for putting some shortcuts on the function keys she thinks are chin rests.

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Date: Sun, 13 Jul 1997 22:11:01 -0500 (CDT)  
From: mjsilva@ix.netcom.com (michael silva)  
Subject: Re: Transformer volt/amp ratings vs the real world

Jeff Duntemann wrote:

>

>But I got the new All Electronics catalog yesterday, and it includes a  
>nice little isolation transformer about the size of those 125V, 50ma  
>transformers I used to use in the Sixties for one and two tube  
>projects. The trouble is, the catalog gives its rating as 50VA, or  
>425ma!

>

>Now, there's no way (in my experience) that a 2" square U-strap  
>transformer will source 400+ mils. So what, if anything, does a  
>volt/amp rating mean, and how do we translate such ratings to  
>realistic expectations of current sourcing ability?

Jeff and all,

I've got a few of those exact transformers that I picked up locally. The major confusion, I believe, is that the VA ratings are for isolation transformer use, which I take to mean a resistive or near-resistive load. Once you start trying to rectify and filter the output the total power you can get goes down quite a bit, depending on the rectifier configuration and filter type chosen. A rough figure is probably about 1/2 of the VA figure in "real Watts out". I get a nice useful 180 volts out of one (195 unloaded), full wave rectified into a cap. input filter. I know those numbers seem a bit high, but I determined that they actually have a step-up ratio of about 1.15:1, presumably to guarantee a full 115 volts out under load and after transformer losses.

73,  
Mike, KK6GM

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Date: Mon, 14 Jul 1997 04:00:31 +0000  
From: Sandy W5TVW <ebjr@worldnet.att.net>  
Subject: WTD: G-R gear info.

Looking for some one who might have manuals they can copy on the following  
General-Radio gear:

1232A Null Detector  
1840A Audio wattmeter/dummy load  
1862C Megohmmeter

Anyone out there have these?

73,  
E. V. Sandy Blaize, W5TVW  
"Boat Anchors collected, restored, repaired, traded and used!"  
417 Ridgewood Drive,  
Metairie, LA., 70001  
ebjr@worldnet.att.net  
\*\*Looking for: 860 tubes, WL-460 tubes\*\*  
\*\*RK-34(VT-224) tubes, Butternut HF2V antenna\*\*\*

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Date: Sun, 13 Jul 1997 22:41:26 -0700  
From: "James H. Haynes" <haynes@cats.ucsc.edu>  
Subject: Interesting (although perfectly useless)

I picked up some old QSTs at the Foothill flea market last week. The first one I opened, June 1935, contains two articles about a technology I had never before heard of. Raytheon had a tube RK100 containing mercury vapor but operating as a linear amplifier, not as a thyratron. The purpose was to produce large plate currents at relatively low plate voltages. One article is about the tube. The other is about an experimental transmitter using them, operating off 110VDC commercial power in places where AC power is not available. I wonder what people in that situation used for receivers? Battery sets? Battery sets with operating voltages derived from the 110VDC mains by means of voltage dividers?

Anyway, if you run across some RK100s glom on to them as they are really odd ducks. The tube has two grids. The first grid is connected to a positive voltage supply so that it gets about 10 volts at 150-250 ma. This keeps a glow discharge going between the cathode and first grid. The second grid is used as the control grid. The geometry is such that the ionization cannot get past the control grid, so it can control the electron stream in the tube. The control grid draws grid current all the time. With 250 ma to the first grid the tube has a transconductance of 20,000 micromhos. The first grid is called a "cathode" because it is an anode for the glow discharge and the cathode for the signal.

Circuits in the experimental transmitter are not too unusual. Because the output impedance of the tube is so low the plates are tapped down on the

tuned circuits. The speech amplifier and modulator were made with transformer coupling; the interstage transformer is run backwards - the plate winding going to modulator grids and what would be grid windings used in the plate circuit of the speech amplifier.

Another interesting article in the same issue concerns radio propagation science. Hams had observed that reliable communication was possible on the 5 meter band over paths 100 miles long. This is considerably beyond line-of-sight. Experiments were conducted over a period of months using both amateur and scientific transmitting stations. It was found that signal strength correlated with the atmospheric lapse rate (the rate at which air temperature decreases with altitude). Average signal strength was highest late and night and early in the morning, and fell to its lowest about 4PM. Conclusion is that atmospheric refraction is very significant in propagation at 56 Mhz; and that propagation might be used to measure lapse rate.

In June 1935 Hiram Percy Maxim was still living and was president of ARRL.

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Date: Sun, 13 Jul 1997 23:53:35 -0600 (MDT)  
From: Terry Dobler KJ7F <kj7f@micron.net>  
Subject: Marker Generators

Gang,

Anyone out there know where I can find some info on marker generators as used in sweep gear for doing alignments of IFs etc? How do they get the markers to fall in the correct spot on the display?

Terry KJ7F

kj7f@micron.net (Boise, Idaho) <http://netnow.micron.net/~kj7f>

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Date: Mon, 14 Jul 1997 07:58:02 -0400  
From: "Brian Carling" <bry@mnsinc.com>  
Subject: Re: BA/GB "net"

On 12 Jul 97 at 8:06, Ken Gordon wrote:  
> >... rockbound! Might be able to squeak the 7120kc job down  
> > to 7117;  
>  
> I have a 7160...also 7020 and 7015

Yes, I have a 7020 but rarely work BA types there.  
Will keep trying. I have worked quite a few on 7040 since I got the Phoenix Crystal pack in here!

> > otherwise I'll be out 'til I can order some new crystals.  
>  
> Likewise: this "cross-band" stuff doesn't work: no one listens off their  
> own frequency...except myself.

Not true. Just lately I have worked a couple of "OT" operators who picked me up about 1-2 kc. away from their calling freq. after they made a CQ!

> > ...OTOH and especially now that Pheonix is in biz, no less a light than  
> > Fred Sutter, W8QBW remarked that crystals had become cheap enough the one  
> > could accumulate quite a few without huge expense;  
>  
> Yes, but still an expense which, at least in our household, is hard to  
> justify.

Sure - you can buy a good VFO for \$40-80 and cover all frequencies rather than buy a handful of rocks, BUT it is nice to be able to be 100% drift free and know you will land on the right spot for a net or a sked.

> > Who knows, might even find one at the Indy Hamfest today! To which I  
> > shall be off now, with high hopes and more cash than I otta. :)  
>  
> Good luck. Tell us what you find.

Yes!

\*\*\*\*\*  
\* Brian Carling in Gaithersburg, Maryland, USA \*  
\* E-mail: bry@mnsinc.com \*  
\* http://www.mnsinc.com/bry/ \*  
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Date: Mon, 14 Jul 1997 06:33:06 -0700 (PDT)  
From: Ken Gordon <keng@uidaho.edu>  
Subject: 7117 kHz.

Are we all agreed to stop there for a while now ? I will order a rock from Phoenix as soon as we are sure.

Actually, after more thought, I agree that being in the Novice band is a good idea: more people can operate there and we may attract new list members. I am still somewhat concerned about SSB QRM though.

I hope I do not appear to be too picky about this frequency hopping business. Its just that I really do a) enjoy using the GRC-109, and b) talking with fellow BA-ites.

When I used to operate the FT-101 on the Novice frequencies I generally used 7105 or so to escape the SWBC QRM.

Ken W7EKB

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Date: Mon, 14 Jul 1997 17:00:15 +0000  
From: Sandy W5TVW <ebjr@worldnet.att.net>  
Subject: Re: Marker Generators

At 05:53 AM 7/14/97 +0000, you wrote:

>Gang,  
>  
> Anyone out there know where I can find some info on marker  
>generators as used in sweep gear for doing alignments of IFs  
>etc? How do they get the markers to fall in the correct  
>spot on the display?  
>  
>Terry KJ7F  
>  
>kj7f@micron.net (Boise, Idaho) <http://netnow.micron.net/~kj7f>  
>  
> Because they do!

Where they fall on a swept "bandpass" pattern depends on how the  
circuitry is aligned! On TV front ends, the two markers allow this without  
a lot of "piddle". It can be done with just one marker, but is a pain in  
the butt  
to keep switching frequencies! Aligning anything like this is sort of an  
artform anyway! The test setup affects the shape of the swept bandpass.  
Does this help any?

73

E. V. Sandy Blaize, W5TVW

"Boat Anchors collected, restored, repaired, traded and used!"

417 Ridgewood Drive,

Metairie, LA., 70001

ebjr@worldnet.att.net

\*\*Looking for: 860 tubes, WL-460 tubes\*\*

\*\*RK-34(VT-224) tubes, Butternut HF2V antenna\*\*\*

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Date: Mon, 14 Jul 1997 11:54:16 -0600

From: "Terry L. Dobler" <kj7f@micron.net>

Subject: Re: Marker Generators

At 05:00 PM 7/14/97 +0000, I wrote:

>snip>

>>etc? How do they get the markers to fall in the correct

>>spot on the display?

Sandy replied:

>> Because they do!

>

>Where they fall on a swept "bandpass" pattern depends on how the

>circuitry is aligned!

OK, that makes sense. I hadn't thought about sweeping

both the detector and the generator. Must be interesting

keeping them in sync.

> Aligning anything like this is sort of an

>artform anyway! The test setup affects the shape of the swept bandpass.

I used to use one in a previous job and found that out the hard way.

Wish I still had access to it.

Then Roy Morgan Wrote:

>If all you have is a sweep generator, a scope, and a signal generator, feed

>the signal generator signal into the front end of the scope along with the

>rf output of the device under test, the two signals will beat as they pass

>each other and create a nice little marker in the scope trace. You could

>also feed the signal generator into the input of the device under test,  
>also, then the two signals will beat in the detector, assuming you have an  
>IF strip.

Hum, if the kids baseball season ever ends I'll have to try this.

Terry KJ7F

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Date: Mon, 14 Jul 1997 19:27:10 -0700 (PDT)

From: "Tom R. Rice" <tomrice@netcom.com>

Subject: Fw: 160 and 80 meter xtals

John Morris of Phoenix Crystals asked me to forward  
this announcement to the list. Replies should be  
directed to John rather than to me.

If we G-Buggers can agree on several good freqs  
a group buy might be indicated.

Forwarded message:

>From phxtal@nava-link.net

> From: "Phoenix Crystals" <phxtal@nava-link.net>

> Subject: Fw: 160 and 80 meter Xtals

> Date: Sun, 13 Jul 97 16:26:23 PDT

> -----

> >

> > Hi Gang,

> > Golly, I'm swamped with e-mail on this.

> > OK let me explain what's going on. First, I've finally located a company

> > that has agreed (on an exclusive basis) to cut and supply me with the

> > blanks which I need for the 160 and 80 meter crystals. Everyone in the

> > crystal industry has discontinued making the square and rectangle blanks

> > as

> > used in the FT-243 type crystals. Several reasons have brought about this

> > condition.

> >

> > First, in the grinding operation of a square crystal, it is ground (square

> > or rect.) in 4 separate grinding operations, whereas in the present

> > "plated" type crystals the blanks are ground round in one centerless

> > grinding operation. This saves considerable labor expense over grinding

> > the

> > square blanks. The square blanks entail higher labor costs.

> >

> > Secondly, costs for the 1700 Khz. blanks are considerably higher than for

> > example 3500 Khz. blanks, because of a lesser yield in producing the 1700

> > Khz. ones. A 1800 Khz blank is approx. .0368" thick verses a 3500 Khz. one

> > at .018" thickness. So you can see that the yield for the lower frequency

> > blanks is about half that of producing one's for the 3500 Khz. frequency.

> > So to recover the expense of the quartz bars from which the blanks are

> > cut,

> > the blank price goes up for the thicker blanks (1700 Khz.).

> >

> > So the manufacturer charges more to offset the additional labor and  
> > material expense, and passes this off to his customer.....Me. So in  
> > attempting to provide a supply both 160, and 80 meter crystals to you I  
> > have had to weigh this and make a decision on utilizing this source. I  
> have  
> > not found any supply of blanks elsewhere that I felt would be a dependable  
> > continuing source. And my interest is to be able to continue as a long  
> term  
> > source of the FT/CR type crystals to you.  
> >  
> > The reason I have taken time to set down and explain this is to try and  
> > show you what's involved on my end of supplying these crystals. Since I  
> was  
> > required to commit to a large purchase quantity of blanks to try and keep  
> > the additional expense of the finished product as low as possible. However  
> > knowing that I would have to charge a higher price for the 160 and 80  
> meter  
> > crystals than I do for the 40 meter stock.  
> >  
> > So here's the new prices:  
> > 160 Meter frequencies: \$8.00 each in FT-241 holders (same pin size and  
> > spacing as the FT-243 Holder)  
> > 80 Meter frequencies: \$7.00 each in FT-243 holders.  
> >  
> > Since a number of you have requested a "group buy" similar to the one I  
> did  
> > on the 40 meter crystals.....here's the offer:  
> > # 1: 5 or more 160 meter crystals \$7.00 each.  
> > # 2: 5 or more 80 meter crystals \$6.00 each.  
> > # 3 Mix-n-match on 5 or more quantity 160 meter @ \$7.00 ea., 80 meter @  
> > \$6.00 ea.  
> >  
> > Plus I'll pay the shipping to the lower 48 states.  
> >  
> > 73 John  
> > PHOENIX CRYSTALS  
> > 1714 NORTH ASH  
> > NEVADA, MO 64772

End forwarded message -----

73 de WB6BYH

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"Start off every day with a smile and get it over with." --W.C.Fields

Tom R. Rice

tomrice@netcom.com

CIS: 71160,1122

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End of glowbugs V1 #75

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Created by **Steve Modena, AB4EL**  
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